

**What is claimed:**

1. A cooling system for an engine inside a power generator, including a cool air suction hood (1), an engine housing side cover (2), an engine housing (6), a cool air cooling fan (9), an exhaust pipe (11); characterized in that,

the cool air suction hood (1) jointed to the engine housing side cover (2), the left air guide plate (3) and the right air guide plate (4) on the upper of the engine secured to the engine housing (6) and form two main cooling and ventilating chambers (A) and (B) on the left and right upper portion of the engine with the cylinder head (5) and the engine housing (6));

a bottom cooling and ventilating chamber (C) of the engine formed of the an engine bottom air guide plate (7) secured to the bottom of engine housing side cover (2), the side cover (2) and an engine crank case rear cover (8);

a double chamber cooling means of the secondary cooling cycle chamber (D) formed of the engine crank case rear cover (8), the cool air suction hood (1), the side cover (2), the left air guide plate (3) and the right air guide plate (4) on the upper of the engine, the cylinder head (5), the engine bottom air guide plate (7), the engine housing (6), a heat insulation chamber body (21), a sealing ring (22) and a heat insulation chamber rear hood (23).

2. The cooling system according to Claim 1, wherein the cool air suction hood (1) is made by the process of polyester injection molding or aluminum-alloy die casting, and is connected to the side cover (2) of the engine housing with bolts (17).

3. The cooling system according to Claim 1, wherein the left air guide plate (3) and the right air guide plate (4) on the upper of the engine are made by the process of polyester injection molding or steel sheet pressing, and are secured on the side surface of the engine housing (6) with bolts (16), which form the two main left and right cooling and ventilating chambers (A,B) on the upper of the engine together with the engine cylinder hood (5) provided with lifting lugs and an air guide plate engaging groove and the engine housing (6) provided with an air guide plate engaging surface.

4. The cooling system according to Claim 1, wherein the air guide plate (7) on the bottom of the engine is

made by the process of polyester injection molding or steel sheet pressing, and is secured to the bottom of the side cover (2) of the engine housing with bolts (18).

5 5. The cooling system according to Claim 1, wherein the engine crank case rear cover (8) provided with the engaging grooves for the heat exhaust air hood and the air guide plate is made by the process of aluminum alloy die casting or steel sheet pressing.

10 6. The cooling system according to Claim 1, wherein the engine cylinder head hood (5) are made by the process of aluminum alloy die casting or steel sheet pressing.

15 7. The cooling system according to Claim 1, wherein the cool air suction hood (1) has a built- in cooling fan (9) and permanent magnet motor (10), the cooling fan (9) sucks in cool air from atmospheric and a slight quantity of hot air from the heat insulation chamber housing (21), the cool air firstly cools the permanent magnet motor (10) in the suction hood (1), and then goes through the left and right main cooling and ventilating chambers (A, B) and the main bottom cooling chamber (C), and cools radiator pieces in upper of engine housing (6), the radiator pieces at the bottom of engine housing side cover (2) and the exhaust pipe (11), then goes on to the engine crank case rear cover (8) with the engaging grooves for the hot air exhaust hood and the air guide plate, and cools off the muffler (13), and finally goes through the exhaust grooves in the heat insulation chamber rear cover (23) and exhausts outside.

20 8. The cooling system according to Claim 1, wherein the heat insulation chamber body (21) provides an air inlet groove in the front bottom thereof to ensure cooling for a counter-converting module (24).